## **Patent Claims**

- 1. Method for the non-instrument-dependent determination of the coordinates of a point (P) imaged using a microscope, wherein first of all, at given object-related reference coordinates  $(X_1, Y_1, Z_1)$  of at least one reference point  $(E_1)$  in a DICOM coordinate system, the relevant instrument coordinates  $(x_1, y_1, z_1)$  of the minimum of one imaged reference point  $(E_1)$  in an instrument-dependent coordinate system are determined and from them a transformation rule  $(\Phi)$  for converting instrument-dependent coordinates (x, y, z) into the coordinates (X, Y, Z) of the DICOM coordinate system is obtained, and subsequently, for non-instrument-dependent coordinate determination, the instrument coordinates  $(x_p, y_p, z_p)$  of an imaged point (P) are converted by means of the transformation rule  $(\Phi)$  discovered into non-instrument-dependent coordinates  $(X_p, Y_p, Z_p)$  of the DICOM coordinate system.
- 2. Method according to claim 1, characterised in that a calibration slide is used to preset reference coordinates  $(X_1, Y_1, Z_1)$  of one or more reference points  $(E_1)$ .
- 3. Method according to claim 2, characterised in that a calibration slide is produced and/or used for each particular type of slide.
- 4. Method according to one of claims 1 to 3, characterised in that overdetermined affine transformation is used to determine the transformation rule, particularly for the (x, y) coordinates.
- 5. Method according to one of claims 1 to 4, characterised in that averaging and/or an approach in the form of an inclined plane is used to determine the transformation rule, particularly for the z coordinates.
- 6. Calibration slide for use in a method according to one of claims 1 to 5, having at least one reference point  $(E_1)$  with preset reference coordinates  $(X_1, Y_1, Z_1)$  in a DICOM coordinate system.

- 7. Calibration slide according to claim 6, which corresponds in shape and size to a known type of slide.
- 8. Use of a calibration slide according to one of claims 6 to 7 for a method according to one of claims 1 to 5.
- 9. System for non-instrument-dependent determination of coordinates of a point (P) to be imaged using a microscope, the microscope comprising a unit (4) for determining instrument coordinates  $(x_p, y_p, z_p)$  of an imaged point (P), while a computer unit is provided which calculates, from the instrument coordinates  $(x_1, y_1, z_1)$  of at least one imaged reference point (E<sub>1</sub>) and associated predetermined object-related reference coordinates  $(X_1, Y_1, Z_1)$  in a DICOM coordinate system, a transformation rule  $(\Phi)$  for converting instrument-dependent coordinates (x, y, z) into coordinates (X, Y, Z) of the DICOM coordinate system.
- 10. System according to claim 9, wherein the computer unit is configured so that it calculates from the coordinates  $(x_p, y_p, z_p)$  of an imaged point (P), using the transformation rule  $(\Phi)$  obtained, the corresponding coordinates  $(X_p, Y_p, Z_p)$  in the non-instrument-dependent DICOM coordinate system.
- 11. Computer program with program coding means, for carrying out a method according to at least one of claims 1 to 5, when the computer program is executed on a computer or a corresponding computer unit, particularly the computer unit in a system according to claim 9.
- 12. Computer program product with program coding means which are stored on a computer-readable data carrier, for carrying out a method according to at least one of claims 1 to 5, when the computer program product is executed on a computer or a corresponding computer unit, particularly the computer unit in a system according to claim 9.